

REMARKS

In the Office Action of March 14, 2006, claims 1-43 are currently pending. Claims 1, 17, and 20 are also herein amended.

The Office Action states that claims 1-9, 12-18, and 22-40 stand rejected under 35 U.S.C. 102(b) as being anticipated by Carlson et al. (USPN 4,577,340).

Amended claim 1 recites an imaging tube assembly that includes a casing. An insert is contained within the casing, within a coolant bath, and has a vacuum chamber. An anode resides within the vacuum chamber and rotates on a shaft via at least one bearing. A seal resides between the insert and the shaft. The seal prevents passage of the coolant bath into the vacuum chamber.

Carlson '340 discloses an x-ray tube 10 with a steel housing 50. The housing is formed from a base plate 12, a sleeve 51, and a main flange 52. A rotor 42 rotates on a shaft 44 within the housing 50. A seal assembly 62 is disposed on the shaft 44 adjacent the housing 50.

Applicants submit that Carlson '340 fails to disclose the insert, the casing, and the seal as claimed. Carlson only discloses the housing 50. The housing 50 is not within a casing or a coolant bath. Also, the seal assembly 62 of Carlson '340 does not prevent a coolant bath from entering a vacuum chamber, especially since Carlson '340 fails to disclose a coolant bath.

Like claim 1, amended claim 17 also recites the limitations of a casing, an insert having a vacuum chamber, and a coolant bath. Claim 17 further recites a pressure transition chamber that is coupled to the insert and the shaft. The pressure transition chamber has an associated middle fluid pressure that is between an internal fluid pressure of the vacuum chamber and an external fluid pressure of the coolant bath.

Carlson '340 does not teach or suggest the claimed pressure transition chamber. Carlson '340 discloses a region between seals 64 and 64' of the seal assembly 42 that is at approximately 100 millibars. The seals 64, 64' do not separate a coolant bath from the stated region or from a vacuum chamber.

Thus, the pressure in the region between the seals 64, 64' cannot and is not compared with the pressure in a coolant bath.

With respect to claim 36, the Office Action states that Carlson '340 discloses preventing the passage of a cooling fluid into a vacuum chamber of a stationary insert via a rotating seal. Applicant, respectively, traverses. Carlson '340 fails to teach or suggest the separation of a vacuum chamber from a coolant bath via a rotating seal. The seals 64, 64' of Carlson '340 separate a vacuum region 60 from shaft bearings 78. There is not a cooling fluid or a coolant bath that surrounds the housing 50 or that is in contact with the seals 64, 64'.

In order for a reference to anticipate a claim the reference must teach or suggest each and every element of that claim, see MPEP 2131 and *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628. Thus, since each and every element of claims 1 and 17 are not taught or suggested by Carlson '340, Applicant submits that claims 1, 17, and 36 are novel, nonobvious, and are in a condition for allowance. Since claims 2-9, 12-16, 18, 22-35, and 37-40 depend from claims 1, 17, and 36, respectively, they too are novel, nonobvious, and are in a condition for allowance for at least the same reasons.

Claims 10-11 and 19-21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson '340 in view of Carlson et al. (USPN 5,978,447).

Applicant submits that since claims 10-11 and 19-21 depend from claims 1 and 17, respectively, that they are also novel, nonobvious, and are in a condition for allowance for at least the same reasons.

With respect to claims 20-21, the Office Action states that Carlson '340 does not disclose a casing surrounding an insert. Applicant agrees. The Office Action, however, states that Carlson '447 discloses a casing surrounding an insert and that it would have been obvious to combine the stated references to arrive at the claimed invention. Applicant traverses. Applicant is unsure how and submits that it is unclear how a casing would be incorporated into or on the x-ray tube of Carlson '340. The x-ray tube of Carlson '340 is attached to a pulley, a motor, an ion pump, an electron gun,

and other devices, which would make such incorporation difficult and possibly infeasible.

Nevertheless, the combination of the stated references does not teach or suggest the claimed limitations and the provided configuration thereof. Note that the region between the seals 64, 64' is not between an insert and a casing. To incorporate a casing around the x-ray tube 10 of Carlson '340 would not provide such a configuration. This is especially true since there is not a coolant bath in contact with the seals 64, 64' or the region therebetween. To surround the x-ray tube 10 of Carlson '340 with coolant would not provide such an arrangement, since the seals 64, 64' are within the main flange 52, which is closed by the shaft 44 and the plate 88. Thus, claims 20 and 21 are further novel and nonobvious for the above-stated reasons.

Claims 41-43 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Carlson '340 in view of Miesbauer et al. (USPN 6,212,256 B1).

The Office Action states that Carlson '340 does not disclose generating an x-ray tube vacuum quality signal in response to a pressure signal and determining whether to perform a maintenance task in response to the quality signal. Applicant agrees. However, the Office Action states that Miesbauer discloses a management system for the replacement of x-ray tubes by monitoring x-ray tube operating parameters and thus the combination of Carlson '340 and Miesbauer would allow one to arrive at the claimed invention. Applicant traverses. The disclosure of a management system in general does not suggest or disclose the generation of the claimed signals.

Miesbauer discloses a system for gathering x-ray scan data from x-ray systems and performing a predictive analysis on the data to predict a failure of an x-ray tube. Miesbauer fails to disclose any pressure sensors and does not mention or suggest the gathering of pressure information. As such, there is no suggestion or teaching of generating any signals or performing any tasks in response thereto. Thus, the combination of the stated references would not allow one to arrive at the claimed invention.

Referring to MPEP 706.02(j) and 2143, to establish a *prima facie* case of obviousness the prior art references must teach or suggest all the claim limitations. Since, both Adams and Miesbauer fail to teach or suggest alone or in combination each and every element of claim 41, it is novel, nonobvious, and is in a condition for allowance. Since claims 42 and 43 depend from claim 41, they too are novel, nonobvious, and are in a condition for allowance for at least the same reasons.

Furthermore, referring to MPEP 2143.01 the fact that references can be modified is not sufficient to establish *prima facie* obviousness, see *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Also, the fact that the claimed invention is within the capabilities of one of ordinary skill in the art is not sufficient by itself to establish *prima facie* obviousness, see *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). The prior art must also suggest the desirability for such combination and modification. There must be an objective reason to combine and modify the teachings of the references, as is necessary in the present case, to arrive at the claimed invention. Applicant submits that no such suggestion or object reason is provided in either reference for the combination and necessary modifications needed to arrive at the claimed invention. Thus, Applicant can only assume that the Examiner is taking Official Notice without providing concrete evidence to back up such notice. Applicant submits that such notice is improper.

Referring to MPEP 2144.03, Office Notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known. The notice of facts beyond the record, which may be taken by the Examiner, must be "capable of such instant and unquestionable demonstration as to defy dispute." *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970). Applicant submits that the limitations in question are not capable of such instant and unquestionable demonstration as to defy dispute. Specific knowledge of the prior art must always be supported by citation to some

reference work recognized as standard in the pertinent art. *Id.* at 1091, 165 USPQ at 420-21. Any facts so noticed should be of notorious character and serve only to "fill in the gaps" in an insubstantial manner. It is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principal evidence upon which a rejection was based. *In re Zurko*, 258 F.3d at 1386, 59 USPQ2d at 1697 (Fed. Cir. 2001). The facts constituting the state of the art are normally subject to the possibility of rational disagreement among reasonable men and are not amendable to the taking of such notice. *In re Eynde*, 480 F.2d 1364, 1370, 178 USPQ 470, 474 (CCPA 1973). Ordinarily, there must be some form of evidence in the record to support an assertion of common knowledge. General conclusions concerning what is "basic knowledge" or "common sense" to one of ordinary skill in the art without specific factual findings and some concrete evidence in the record to support these findings will not support an obviousness rejection. *In re Lee*, 277 F.3d at 1344-45, 61 USPQ2d at 1434-35 (Fed. Cir. 2002). The Examiner must provide specific technical and scientific reasoning to support his or her conclusion of common knowledge. *In re Soli*, 317 F.2d at 946, 37 USPQ at 801 (CCPA 1963). Applicant submits that no specific factual findings or concrete evidence has been put forth nor has any specific technical reasoning been put forth to support the Official Notice taken. Also, if Applicant challenges a factual assertion, as Applicant does herein, as not properly officially noticed or not properly based upon common knowledge, the Examiner must support the finding with adequate evidence. See 37 CFR 1.104(c)(2).

Applicant is aware that hindsight reasoning is proper so long as it takes into account only knowledge which was within the level of ordinary skill at the time of the claimed invention was made and does not include knowledge gleaned only from the Applicant's disclosure. Applicant believes that to arrive at a conclusion of obviousness, especially in view of the above relied upon references, can only be made through the gleaning of knowledge from Applicant's disclosure. It is never appropriate to rely solely on common

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knowledge in the art without evidentiary support in the record as the principal evidence upon which a rejection was based. *Zurko*, 258 F.3d at 1386, 59USPQ2d at 1697 (Fed. Cir. 2001). The facts constituting the state of the art are normally subject to the possibility of rational disagreement among reasonable men and are not amendable to the taking of such notice. *In re Eynde*, 480 F.2d 1364, 1370, 178 USPQ 470, 474 (CCPA 1973). Ordinarily, there must be some form of evidence in the record to support an assertion of common knowledge. General conclusions concerning what is "basic knowledge" or "common sense" to one of ordinary skill in the art without specific factual findings and some concrete evidence in the record to support these findings will not support an obviousness rejection. *Lee*, 277 F.3d at 1344-45, 61 USPQ2d at 1434-35 (Fed. Cir. 2002). The Examiner must provide specific technical and scientific reasoning to support his or her conclusion of common knowledge. *In re Soli*, 317 F.2d at 946, 37 USPQ at 801 (CCPA 1963). Applicant submits that no specific factual findings or concrete evidence has been put forth nor has any specific technical reasoning been put forth to support the assertion of common knowledge.

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In light of the amendments and remarks, Applicant submits that all the rejections are now overcome. The Applicant has added no new matter to the application by these amendments. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments, the Examiner is respectfully requested to contact the undersigned attorney.

Respectfully submitted,

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Dated: April 19, 2006